

*Zeritis bicolor*, sp. n.

I have ventured to describe this species, as there are six specimens, all alike, in Mr. Crowley's collection, which has at the same time eight specimens of *Z. leonina*, E. M. Sharpe. I therefore think that there can be no doubt of the distinctness of *Z. bicolor* from *Z. leonina*.

The underside resembles that of *Z. leonina* very closely, but the upperside is decidedly different, especially as regards the fore wing.

Fore wing entirely black, with the exception of a very minute spot or streak of orange-rufous on the inner margin nearest to the hind margin.

Hind wing: base shaded with black; costa and part of hind margin broadly marked with black, which gradually decreases and terminates at the end of the second median nervule. The rest of the wing is bright orange-rufous, which fades to a pale yellow on the inner margins.

Exp. 1·2 inch.

*Hab.* Sierra Leone.

XXIX.—Notes on some *Scorpions* collected by Mr. J. J. Walker, with Descriptions of Two new Species and a new Genus.  
By R. I. ПОЦОК.

[Plate XIII. B.]

*Buthus scaber* (Hempr. & Ehrb.).

*Prionurus scaber*, Hempr. & Ehrb., Symb. phys. Scorp. no. 13, pl. ii. fig. 7.

? *Buthus dimidiatus*, Simon, Ann. Mus. Genov. xviii. pp. 244, 245, pl. viii. fig. 17 (1882).

Mr. Walker obtained two specimens from Perim Island, at the entrance of the Red Sea. Ehrenberg's type was from Arkiko, on the coast of Abyssinia. *B. dimidiatus* was captured at Tes, in Arabia.

Mr. Walker's specimens are undoubtedly co-specific with the type of *P. scaber*, since they closely agree with Ehrenberg's admirable figure of his species.

M. Simon describes *dimidiatus* as having the tail *ferè parallela* and the vesicle *subter valde et grosse tuberculata*—two phrases which certainly do not apply either to the figure of *scaber* or to my specimens of this species. In the figure

and in the specimens the vesicle is almost smooth beneath and the tail is much thicker at the base than at the apex. In other respects the description of *dimidiatus* applies closely to the examples Mr. Walker obtained.

Prof. Kraeplin, for some unknown reason, thought *scaber* might be a synonym of *gibbosus* of Brullé. In face of the figure of *scaber* this view is quite untenable; for it is clearly shown that the inferior keels of the fifth caudal segment are uniformly granular throughout—a character to which even Prof. Kraeplin appears to attach some importance, judging from the prominence he has given to it in his synoptical table of some of the species of the genus. In *gibbosus*, as is well known, these keels are irregularly dentate. But this is not the only error into which Prof. Kraeplin has fallen in his attempt to give the synonymy of *gibbosus*; for, without qualification, he adds *confucius* of Simon to the list. This is the second time that it has fallen to my lot to rescue *confucius* from oblivion; but I have now neither the time nor the inclination to point out how it differs from *gibbosus*. I will merely say that no one accustomed to handling scorpions could, with the species before him, possibly confound the two.

Prof. Kraeplin suggests, moreover, that *B. nigrocinctus* of Ehrenberg may be another synonym of *gibbosus*. To this it may be said that there is nothing in the description and the figure of *nigrocinctus* to justify this belief.

*B. scaber*, as Karsch long ago pointed out, belongs to the *hottentotta* group. But the time, I believe, has not yet come for asserting positively, as Prof. Kraeplin has done in the case of other species, that it is a synonym of *hottentotta*. It at least differs from all the specimens of *hottentotta* and of *Martensii* that I have examined in the absence of the median lateral keel on the third and fourth caudal segments. Of all the forms known to me it approaches nearest to *judaicus*.

*Buthus quinque-striatus*, Hempr. & Ehrb.

*Buthus quinquestriatus*, loc. cit. no. 1, pl. i. fig. 5.

Two specimens were obtained at Perim Island. The British Museum has many specimens of this species from Egypt, and others from Jerusalem, Algeria, the Cape of Good Hope, and South Africa. The specimens from the Cape and from South Africa were in the Earl of Derby's collection. If the localities are to be trusted the distribution is of very great interest, for I am not aware of a single other scorpion that occurs in both North and South Africa. Since, however, so far as I am aware, this is the only record of the extension of *B. 5-striatus* south of the equator, it seems advisable to

wait for confirmation of the fact before accepting it definitely as true.

*Isometrus bituberculatus*, sp. n.

*Colour* (in alcohol) variegated with fuscous above, pale beneath, the brachium almost entirely fuscous, fulvous only at its distal extremity; manus fulvous, dactyli fuscous in their distal half, posterior half of the fifth caudal segment fuscous, lower half of vesicle and distal half of aculeus fuscous.

*Cephalothorax* coarsely granular throughout, the granules showing a distinct tendency in some parts to constitute definite keels; the posterior median keels well marked, slightly diverging in front; the median eyes large, the tubercle granular at the sides.

*Tergites* coarsely granular, the median keel well marked; a tubercle on each side of the median keel on the posterior margin marks the position of the lateral tergal keels characteristic of, e. g., *Buthus*; the lateral keel on the seventh tergite subequal in length, with the posterior granule a little longer.

*Sternites* mostly smooth, the fourth and fifth granular at the sides; the fifth marked with four granular keels, the lateral of which almost attain the posterior margin.

*Tail* moderately strong and long, the first, second, and third segments furnished with ten strong granular keels, the fourth with eight keels and merely vestiges in front of the supernumerary median lateral keel, all the intercarinal spaces more or less granular; the posterior granule of the four superior keels on the first three segments and of the two superior keels on the fourth segment a little larger than the rest; the fifth segment with its intercarinal spaces coarsely and subserially granular, smooth and depressed in the middle line above. *Vesicle* of average form, distinctly granularly carinate beneath, the aculeus elongate and curved.

*Palpi*, *humerus*, and *brachium* with their keels strongly developed, granular, the intercarinal spaces finely granular; *manus* narrower than the brachium, above bearing distinctly granular keels; *dactyli* long, slender, and curved, in contact throughout their length.

*Legs* granular and carinate; the posterior two pairs with small tibial (tarsal) spur.

*Pectines* short, furnished with 11-12 teeth.

*Measurements in millimetres*.—Total length 16, length of tail 9, of cephalothorax 2.5, of manus and dactyli 3, of dactyli 2.

A single specimen (young) from Baudin Island.

I cannot refer this specimen to any known species of *Iso-metrus*. Perhaps it is most nearly related to *I. variatus* of Thorell; but it appears to me to differ from this last-named in its granularly carinate hands, its more distinctly carinate cephalothorax, and in the presence of a tubercle which marks the position of the lateral tergal keels, &c.

On p. 84 of his recent attempt to revise the Buthidæ, Prof. Kraeplin boldly gives *I. Thorellii*, Keys., as a synonym of *I. variatus*, Thor., and both as synonyms of *I. marmoreus* of C. Koch. But I think he is wrong in considering *Thorellii* as synonymous with *variatus*. The British Museum has six of Keyserling's examples of *variatus* and many specimens of *Thorellii* from Australia (Sydney, Swan River, Goulburn River), not including Keyserling's own examples from Sydney—the whole number making a total of fifteen specimens of both sexes—and these are very uniform in character, *i. e.* they are all considerably smaller than *I. variatus*, are more deeply infuscate above and always infuscate below, and the vesicle and aculeus have a different form from those of *I. variatus*. I know that Prof. Kraeplin has very little regard for variations of colour, but he has not explained the difference in the shape of the caudal vesicle between the two species. This character, correlated with the difference of size (the specimen of *Thorellii* being to all appearance adult) and the difference of colour, justify, in my opinion, the rejection of this author's view. For my own part, I feel tolerably sure that *Thorellii* is synonymous with *marmoreus*, but that *variatus* is a distinct species.

#### *Urodacus novæ-hollandiæ*, Peters.

*Urodacus novæ-hollandiæ*, Peters, Mon. Ak. Wiss. Berlin, 1861, p. 511; Pocock, Ann. & Mag. Nat. Hist. (6) ii. pp. 169, 170, pl. viii. fig. 1; not *U. novæ-hollandiæ*, Keyserling, Arach. Austral. pt. 32, pp. 34, 35, pl. iii. fig. A.

Mr. Walker obtained a single specimen at Fremantle, near Perth, in W. Australia—a locality new for the species.

I find upon examining the specimens that Count Keyserling described and figured as *U. novæ-hollandiæ* that they are not the same species as those specimens in the British Museum to which I had applied this name—one of which is figured in the above-mentioned number of the 'Annals.'

My reason for thinking that my identification is probably correct and that Count Keyserling was in error is that Peters described the hands of his species as being "*stark gekielt*." This expression applies to my specimens much more forcibly

than to those in Keyserling's collection; for, as may clearly be seen from the figure given by this author, the keel on the upper surface of the hand is very feebly developed.

I propose to call this species *U. Keyserlingii*, in honour of the late eminent arachnologist.

This new species is most closely allied to *U. abruptus*, Pocock, and may prove to be identical with it. The hands, however, are much less strongly keeled.

#### IODACUS, gen. nov.

*Cephalothorax* with ante-ocular portion flat and anterior margin widely excavated; *median eyes* in the middle of the cephalothorax, the tubercle cleft; *lateral eyes* two, above the border of the cephalothorax.

*Sternum* pentagonal, as long as wide, with sides subparallel, perhaps very slightly converging anteriorly.

*Tail* weak, furnished below with a single median keel, exactly as in *Urodacus*, without a spine beneath the aculeus.

*Chelicerae* with lower borders of digits unarmed; apex of movable digit simple, undivided.

*Chelae* with hands flat, almost as in *Euscorpius*; the proximal half of the digits furnished with many small subequal denticles, irregularly arranged in three rows; the distal end with a median series of denticles and an external and internal series formed of transversely set denticles.

This new genus is closely related to *Urodacus*, Peters, as is shown by the presence of a median keel on the lower surface of the caudal segments &c. It differs, however, in the shape of the sternum, which is as long as wide, and in having the upper surface of the manus flattened. In *Urodacus* the sternum is considerably wider than long and the hand is convex above. It is probably also related to *Ioctonus*—a genus unknown to me; but it certainly differs in the keeling of the tail and in the form of the sternum\*.

#### *Iodacus Darwinii*, sp. n. (Plate XIII. B.)

*Colour* (in alcohol) pale ochraceous or testaceous throughout.

*Cephalothorax* perfectly smooth, very sparsely punctured and hairy, narrowed anteriorly, its posterior width greater

\* The sternum in *Ioctonus* is presumably wider than long. In his description, however, of *I. manicatus* Dr. Thorell (p. 263) says:—"Sternum duplo fere longius quam latius;" whereas of the following species, *I. orthurus* (p. 265), he remarks, "Sternum multo latius quam longius." If these descriptions be exact the two species can scarcely be congeneric. But there can, I think, be little doubt that in the case of *I. manicatus* the words *longius* and *latius* have become transposed; for no scorpion to my knowledge has the sternum nearly twice as long as wide.

than its length, depressed laterally, the frontal lobes rounded, divided throughout by a longitudinal sulcus, which immediately behind the eye expands into a shallow triangular depression; *median eyes* small, separated by a distance greater than a diameter; anterior eye of the *lateral* pair longer than the posterior and separated from it by a space about equal to the diameter of the posterior eye.

*Tergites* perfectly smooth throughout and shining, sparsely and subsymmetrically punctured and hairy in front, depressed on each side of the middle line; the posterior tergite very weakly granular laterally and posteriorly. *Sternites* smooth and shining, sparsely punctured and hairy, on each side of the middle bearing two posteriorly abbreviated impressions; posterior sternite furnished with two smooth anteriorly abbreviated keels, and between them with two fine juxtaposed impressions. *Stigmata* narrow and slit-like.

*Tail* about three and a half times the length of the cephalothorax, slender, narrowed posteriorly, the first segment furnished with nine keels, the second, third, and fourth with seven keels, the median lateral keel on the second being represented by merely a short, anteriorly abbreviated crest in the posterior fourth of the segment, and being entirely absent on the succeeding segments; the superior keels of these four segments only very finely granular, the inferior keels smooth, intercarinal spaces smooth; fifth segment with its upper surface smooth and nearly flat, sulcate anteriorly, the superior keels very finely granular, the lateral keel also finely granular and posteriorly abbreviated, the inferior surface granular, the lateral and median keels coarsely granular, the median keel double nearly throughout its length, the space between the two halves gradually widening posteriorly. *Vesicle* narrow, pyriform, punctured and hairy, and exceedingly finely granular beneath, the aculeus short and but little curved.

*Palpi* powerful; humerus smooth above, below, and behind, the anterior surface coarsely but irregularly granular, the supero-posterior keel evenly granular throughout; *brachium* smooth and not costate supero-posteriorly, its posterior surface deeply marked with pores and very hairy, its inferior surface smooth below, bounded behind by a smooth ridge, in front of which is a distinct series of punctures; the anterior surface nearly flat, bounded above and below by a ridge which is exceedingly finely granular; *manus* smooth, nearly flat above, its upper surface marked mesially by an almost obsolete, posteriorly abbreviated ridge, which starts from the immovable dactylus, the posterior or external surface meeting the upper surface at an obtuse angle, strongly convex from above down-

wards, a double series of punctures above its inferior keel; lower surface furnished close to the posterior keel with a series of about twelve piliferous pores; the anterior surface smooth, its upper edge feebly granular; the upper surface when examined with a lens is seen to be adorned with a very fine reticulated pattern; *dactyli* of normal form, in contact throughout.

*Legs* short, *coxæ* smooth, femora very finely granular in front; two rows of spines on the under surface of the distal tarsal segment or foot, the claws free, covered only at the base by the lateral lobes of the foot, the second tarsal segment furnished with a single distal spur.

*Pectines* short, furnished with eleven similar teeth, the basal sclerite of the intermediate laminae slightly lobate.

*Genital operculum* with right and left halves completely fused to form a plate which is about twice as wide as long, with rounded sides and a lightly convex posterior border.

*Measurements in millimetres.*—Total length 5.9; length of cephalothorax 7.5, greatest width 8; length of tail 2.7, of first segment 3.3, of second 3.8, of third 4, of fourth 4.2, of fifth 6.5, width of first 3, of end of fifth 2; palp—length of humerus 5.5, width 3; length of brachium 6.5, width 3; length of "hand-back" 7, width of hand 5.3, height of hand 3; length of movable dactylus 7.6.

A single female specimen from Port Darwin (N. Australia).

The form of the genital operculum in this species is the same as in the type of *Urodocus excellens*, Pocock\*.

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XXX.—*A List of the Land and Freshwater Shells of Barbados.* By EDGAR A. SMITH and Col. H. W. FEILDEN.

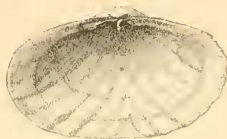
BARBADOS lies about one hundred miles to the eastward of all the West-Indian islands, and is separated from its nearest neighbours, the group designated the Windward Islands, by an oceanic depression of 1000 to 1500 fathoms; between Barbados and the island of Tobago to the southward, which latter has presumably been connected with the mainland of South America since the introduction of its existing fauna and flora, we find depths of over 1000 fathoms. To the eastward of Barbados the floor of the ocean rapidly sinks into the profound depths of the Atlantic. Though Barbados is not

\* Ann. & Mag. Nat. Hist. (6) ii. pp. 170-172, pl. viii. fig. 2.

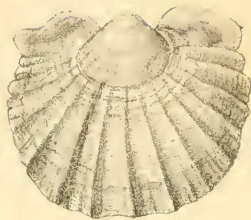
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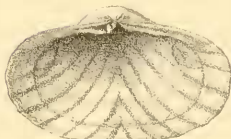
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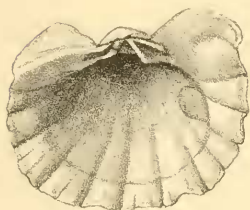
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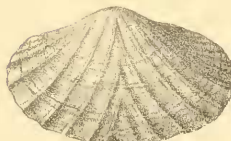
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